GUAM ENVIRONMENTAL PROTECTION AGENCY • *AHENSIAN PRUTEKSIÓN LINA'LA' GUÅHAN*
LOURDES A. LEON GUERRERO • GOVERNOR OF GUAM | JOSHUA F. TENORIO • LIEUTENANT GOVERNOR OF GUAM
WALTER S. LEON GUERRERO • ADMINISTRATOR | MICHELLE C. R. LASTIMOZA • DEPUTY ADMINISTRATOR

RECEIVED BY: [redacted]
DATE: 16 Aug 21

AUG 16 2021

Samsung E & C America, Inc.
(Respondent)
Mr. ByungHyup Kim, Project Manager
Mangilao Solar Project
P.O. Box 218008
Barrigada, Guam 96921
Contact # 689-1790

Subject: **Compliance Assessment – Order Item 1; July 29, 2021 Notice of Violation / Compliance Order / Penalty Order**

This letter is to acknowledge and address the e-mailed request from Samsung E & C America, Inc. ("Respondent") dated August 3, 2021, to inspect the work performed in response to Order Item 1, from the July 29, 2021 Notice of Violation / Compliance Order / Penalty Order ("Order"). Order Item 1 required the following:

1. **Within seven (7) days of receipt of this order:** Complete installation of interim measures intended to partially capture runoff and sediment prior to off-site discharge from the location of: (a) Pond 4 and (b) Pond 5. Coordinate approval of the scope and nature of such interim measures with GEPA and then contact GEPA for site inspection upon completion.

August 5, 2021, marked the seventh day following the date of issuance of the Order. Staff from the Guam Environmental Protection Agency (GEPA) conducted an inspection on August 4, 2021, in response to Respondent's request. A copy of the GEPA inspection report is attached. Based on the findings of our inspectors, I have determined that Respondent has satisfactorily completed the remedial actions required under Order Item 1, subject to the following conditions:

1. Continuous inspection and maintenance of erosion and sediment control (E&SC) best management practices (BMPs) is required. In particular, these measures must be inspected after every rainfall event, and serviced as necessary.

2. All silt fence must be installed with the bottom portion of the fabric buried in accordance with standard installation instructions. The use of sandbags or other materials to hold the fabric down on top of the original grade is not adequate. This is especially important in areas which receive substantial runoff or are located near other properties, such as (but not limited to) the area directly upgradient of Marbo cave, and the area below the Pond 3 area. Please refer to the 2006 CNMI & Guam Stormwater Management Manuals (adopted under Executive order 2012-02) available on our website here: http://epa.guam.gov/programs/water-pollution-control/

Please refer especially to the revised Appendix A7 for silt fence installation here: http://epa.guam.gov/wp-content/uploads/2019/04/Silt-Fence-Appendix-A7-Revisions-May2010.pdf

The fully illustrated Guam Erosion & Sediment Control Field Guide is especially useful for on-site personnel, and can be downloaded from the same web page: http://epa.guam.gov/wp-content/uploads/2019/04/ESC_fieldguide_Guam2017.pdf

3. The area between the Pond 5 system and the site boundary must be stabilized as soon as possible through revegetation or other means to prevent the stockpiled soils and bare surfaces in this area from washing off-site toward Marbo Cave. GEPA acknowledges that Respondent has been told not to disturb this area until archeological work is completed. Therefore, until the archeological work is completed and Respondent can begin soil stabilization work, extra attention must be paid to the maintenance of the silt fence at this location.

4. Interior site swales should be protected by the installation of stone check dams. See the officially adopted manual and field guide referenced above. The purpose of check dams is to reduce erosive flows and allow sediment to settle out, which reduces the amount of sediment reaching the sedimentation basins and conserves the capacity of those ponds to retain runoff from future storm events.

Should you have any questions or need additional information, please do not hesitate to contact me and my staff at Water Pollution Control Program or Water Division Chief Engineer, CAPT Brian Bearden, P.E., BCEE at 300-4786 and 300-4779, respectively.

Dångkolu na si Yu'us ma'åse'.

Senseramente,

WALTER S. LEON GUERRERO
Administrator

Attachments: GEPA Inspection Report dated Aug. 4, 2021

cc: GEPA Legal Counsel

August 6, 2021

TO: FILE

FROM: Chief Engineer, Guam Environmental Protection Agency (GEPA)

SUBJECT: Site Inspections at Samsung Mangilao Solar Project Site, August 4, 2021, for the purpose of compliance determination; Order Item 1

GEPA received an email from Mr. B. H. Kim of Samsung C&T ("Samsung") late in the evening of August 3, 2021, requesting inspection for the purpose of determining compliance with Order Item 1 from GEPA's July 29, 2021, Notice of Violation / Compliance Order / Penalty Order ("Order"). Re-stated here, Order Item 1 requires:

1. **Within seven (7) days of receipt of this order:** Complete installation of interim measures intended to partially capture runoff and sediment prior to off-site discharge from the location of: (a) Pond 4 and (b) Pond 5. Coordinate approval of the scope and nature of such interim measures with GEPA and then contact GEPA for site inspection upon completion.

The site inspection report was conducted by myself and Johnny Abedania, GEPA Water Pollution Control Program Manager, between approximately 2:45 p.m. and 3:15 p.m. on Wednesday, August 4, 2021. Just prior to this, between approximately 1:30 p.m. and 2:15 p.m., Samsung had met with us and their design engineer, TG Engineers, at our office to discuss design revision needs related to compliance requirements, and to explain to us the interim measures that had been completed in response to Order Item 1 at the locations of Ponds 4 and 5.

We began our inspection near the project office, located near Pond 4. We were shown a newly dug interior swale which began within the solar panel area above the area between Ponds 4 and 5. Samsung explained to us that the purpose of this swale was to divert surface runoff away from Pond 5 and into Pond 4, to reduce the pressure on Pond 5. They explained that one of the recent rainfall events had caused some erosion of the temporary berm between Pond 5A and Pond 5B, but the discharge did not leave the site and was captured in Pond 5B. The affected portion of the Pond 5A temporary berm had been reinforced with plastic tarp and sandbags. According to Samsung, after the new diversion berm was installed, the Pond 5 system had collected much less runoff and was no longer in danger of overfilling and washing out the temporary berm.

We then proceeded to Pond 5A and observed the condition of the pond and temporary berm installed as interim measures. Construction of the permanent Pond 5A berm was underway with compaction equipment at the time. Fresh sediment could be seen in the bottom of Pond 5A, and

evidence of a high water line about a foot or less above the bottom. There had been significant rain events the previous few days, and Samsung stated that the water level in Pond 5A had remained at this low level due to the diversion of runoff caused by the new swale, and that their continued removal of collected sediment to help facilitate infiltration.

We were then shown the extension of the Pond 5 interim berm system around the area of Pond 5B. Active excavation and grading was underway in this area, and because of that we were unable to see any evidence of how high the water had come in this area on the previous days. The plastic tarp cover on the portion of the temporary berm which had reportedly washed out appeared to be freshly applied, with no visible indication of sediment or a high water mark. Excavation and grading of the areas around Pond 5B was underway, according to Samsung, for the purposes of completing the grading of the swale and surrounding areas. Behind the Pond 5B area was a high berm, which had been placed as the primary interim measure to prevent discharge of runoff from this area toward Marbo Cave.

We then examined the area on the other side of the interim berm. In most places this was a relatively narrow area approximately 20-40 feet from the berm to the project fence, and protected by a single line of wire-mesh reinforced silt fence. However, in the area immediately behind the Pond 5 construction, the berm curves away from a sharp corner in the project boundary, leaving a roughly triangular-shaped area over 100 feet across at its widest point. Inside this area there was a pile of soil and debris, possibly remaining from the clean-up of the sediment discharge observed July 23. I observed that this poses a risk of further discharge of sediment from the site, and recommended that it be removed as soon as possible so that the soils in this area could be stabilized and revegetated. Samsung stated that they had been told not to excavate in this area by their site archeologist, and called our attention to flagging which marked areas where archeological work was still required to be performed.

Within this area we also noticed that some of the silt fence had not been properly buried below the soil surface, and had instead been laid on top of the ground surface and covered with soil. The soil had been washed away by the recent rain events and exposed the bottom of the silt fence, however it remained in place because of the wire mesh reinforcement. We told Samsung that this must be corrected, and that silt fence fabric needs to be buried in accordance with standard silt fence installation details and the approved site erosion and sediment control plan. Samsung agreed and stated that they would correct this immediately.

We then walked toward the Pond 4 area, and followed the new interior drainage swale. Along the way I pointed out erosion within the swale and sedimentation near its lower end, and told Samsung that their approved site plans included details and instructions for stone check dams, which were meant to be installed within site swales to slow water velocities and prevent erosion, until the site could be fully stabilized. They agreed to install the measures according to the plans.

We were shown Pond 4, which is presently formed by the emplacement of a temporary (interim) berm, and is divided in half by another berm that has been placed to allow installation of the permanent Pond 4 berm to take place on the other half. Evidence of a high water mark was observable at the lower end of the active portion of Pond 4, indicating that the water level had

reached less than about 1 foot above the bottom of the berm during the recent rain events. The berm appears to be about 4 feet high.

We also examined Pond 2, which still held a considerable amount of water and sediment. We were shown a new swale which had been installed along the southern boundary of the site to better capture runoff and discharge it to the pond. While we were in this area, someone drove past us toward the site office and waved at the Samsung staff. I asked who that was, and the Samsung staff informed me that was the Fichtner representative. Fichtner is identified on the site project sign as the "consultant" representing the owner, Kepco.

We held a short briefing to go over our findings:

- The interim measures appear to have been adequate to prevent discharge from the Pond 4 and 5 areas during the most recent rain events, which had been fairly significant
- Continuous inspection and maintenance of the berms, silt fences, swales and other measures would be required.
- Silt fence fabric must be buried properly in accordance with industry standard installation instructions, and that the area in the corner above the Marbo Cave area was of particular concern and the silt fence there needed to be properly installed right away.
- Swales should be protected through the installation of stone check dams in accordance with the approved site plans.
- There was nothing Samsung could do about removing the stockpiled soil in the corner area above Marbo Cave until they are cleared by the archeologist to continue work in that area. Once they are cleared, the stockpiled material should be removed and the soil surface needs to be properly stabilized.

See attached photos.

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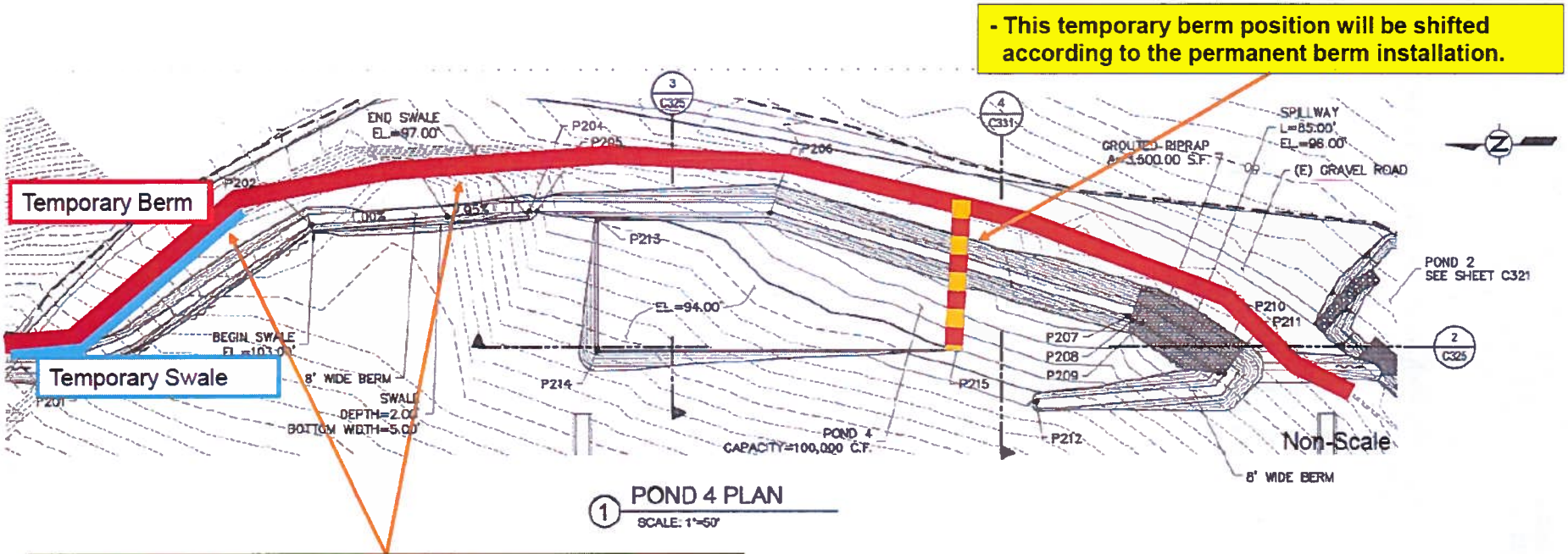
Date: 2021.08.06 16:37:09 +10'00'

BRIAN G BEARDEN
CAPT, U.S. Public Health Service
Chief Engineer, Guam EPA

Interim measures plan submitted by Samsung on August 4, 2021, for Pond 4 area

Mangilao Solar Project: Interim Measures on Pond 4



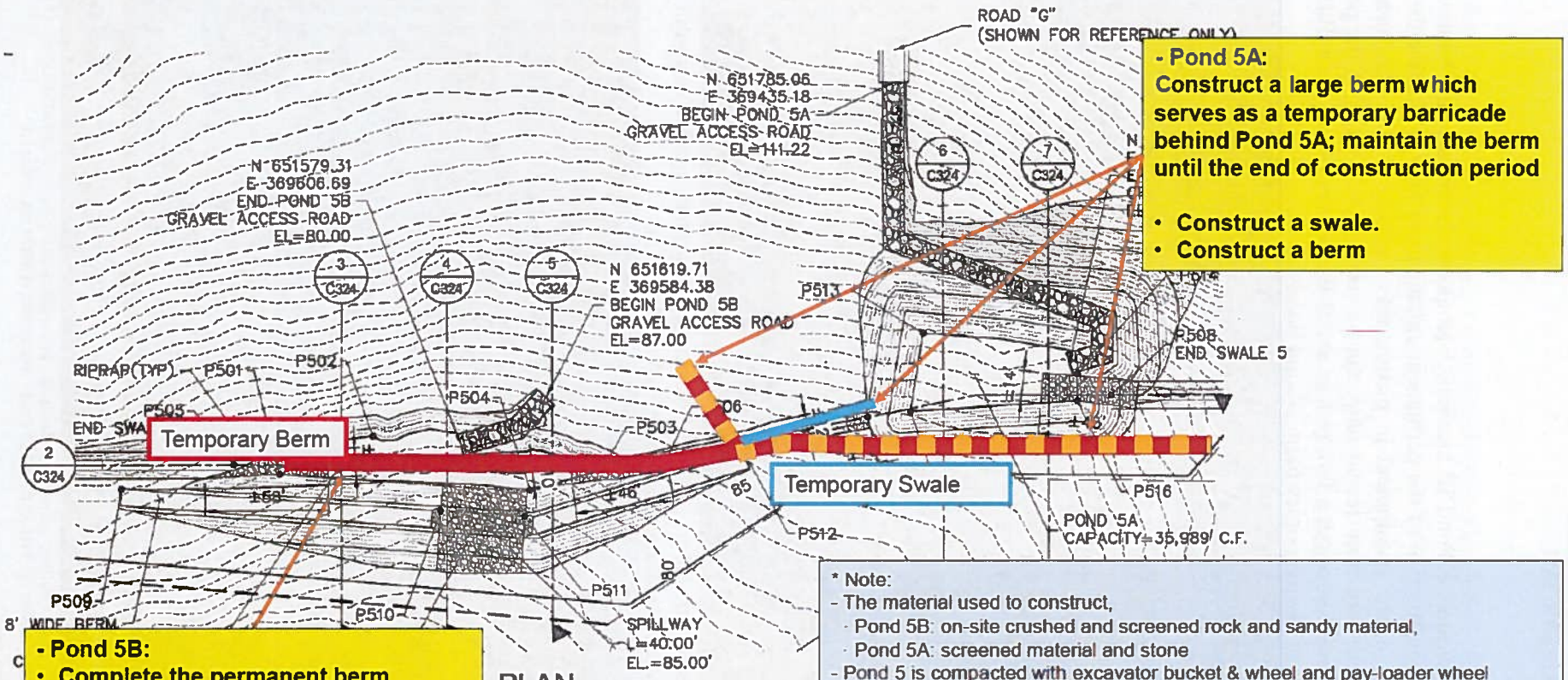
① POND 4 PLAN
SCALE: 1"=50'

- Construction temporary berm and swale
- This temporary berm and swale will be maintained until the end of the permanent berm and swale installation.

* Note:
- The material used to construct,
  - On-site crushed and screened rock and sandy material,
- Pond 4 is compacted with roller a few times
- The elevation of the temporary berm is similar to the permanent berm.
- There has been ongoing excavation to clean sediment from the basin areas.

Interim measures plan submitted by Samsung on August 4, 2021, for Pond 5 area

Mangilao Solar Project: Interim Measures on Pond 5



- Pond 5A:
Construct a large berm which serves as a temporary barricade behind Pond 5A; maintain the berm until the end of construction period

- **Construct a swale.**
- **Construct a berm**

- Pond 5B:
- **Complete the permanent berm**
- **Remove the temporary berm which sits in the middle of the basin**

* Note:
- The material used to construct,
  - Pond 5B: on-site crushed and screened rock and sandy material,
  - Pond 5A: screened material and stone
- Pond 5 is compacted with excavator bucket & wheel and pay-loader wheel
- A part of Pond 5A is vulnerable to the higher potential for flood water and is covered with tarps and tightened with sand bags
- The elevation of the temporary berm is similar to the permanent berm.
- There has been ongoing excavation to clean sediment from the basin areas.

View of interim measures at Pond 5B location. A temporary berm currently holds water back from the site of active construction of the permanent embankment that will define the full volume of Pond 5B when complete (equipment in picture was working on the permanent embankment emplacement). Sediment from recent rains can be seen in the bottom of the pond, along with indications of a water line about a foot or less above the bottom of the pond. Blue plastic tarp is covering a portion of the temporary berm around Pond 5A. (Aug. 4, 2021)

Closer view of temporary berm in Pond 5A and tarp to protect against wash-out caused by flow around its end, which discharges to Pond 5B (Aug. 4, 2021)

Work underway at Pond 5B to widen incoming swale and complete surrounding grading. The temporary berm can be seen behind the excavator with the worker standing on top. The blue tarp reinforcement was placed on the same berm but to the right, outside the picture. (Aug. 4, 2021)

Overview of the area below Pond 5, outside the temporary berm and located just up-gradient from Marbo Cave. This area is protected by a single line of silt fence. The remaining soil stockpile inside this area cannot be removed due to archeological work that needs to occur (Aug. 4, 2021)

View of area outside temporary berm near Pond 5, showing flagging (orange) marking locations for archeological investigation, and stockpile of soil that still needs to be removed. (Aug. 4, 2021)

Section of silt fence showing inadequate burial of fabric, and erosion of soil that occurred on recent rain event. Silt fence fabric remained in place, however, likely due to the use of wire mesh backing as reinforcement. Samsung stated that they would correct this immediately. (Aug. 4, 2021)

View looking past the silt fence just outside of Pod 5 area, down the trail toward Marbo Cave. Erosion from rainfall events of the previous day can be seen in the form of soil scoured from the improperly buried bottom section of the fence fabric. It appears that the silt fence was effective at preventing discharge toward Marbo Cave at this location. (Aug. 4, 2021)

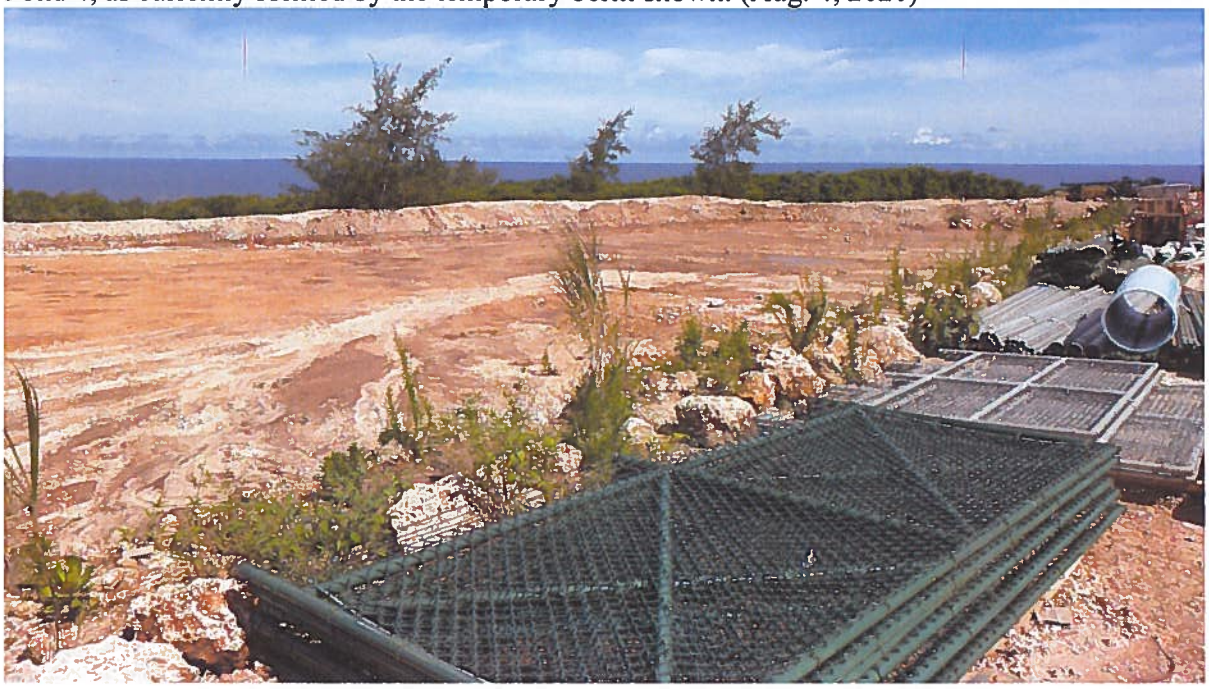
View from silt fence-protected area outside the temporary berm around the Pond 5 area, looking back toward active construction (compaction) of Pond 5B. The temporary/interim berm can be seen partly covered by the blue tarp on the right, and behing the compaction equipment on the left. (Aug. 4, 2021)

Start of new swale, which intercepts surface runoff within the site and diverts it away from Pond 5 and to Pond 4 (Aug. 4, 2021)

Continuation of new swale, looking in direction of flow toward Pond 4. Also note line of silt fence located just past perimeter fence on left, which captures runoff and erosion from the top of the berm and beyond. (Aug. 4, 2021)

Discharge location of new swale into Pond 4. Berm seen here is a temporary berm put in place by Samsung to hold water in location of Pond 4, while permanent embankment construction takes place. (Aug. 4, 2021)

Pond 4, as currently formed by the temporary berm shown. (Aug. 4, 2021)



Temporary berm placed about halfway into Pond 4, designed to keep water out of the other half (to the right) while construction of the permanent pond embankment takes place. The high water mark from the previous days' rainfall events can be seen on the face of the berm, less than 1 foot deep. (Aug. 4, 2021)

Pond 2, showing sediment load which was captured from new swale added along the south border of the project site (to right side of picture). (Aug. 4, 2021)

View of new swale installed to capture runoff from south boundary of project. (Aug. 4, 2021)

Sediment load from new swale resulting from rain events over the previous few days, captured by Pond 2 as shown. (Aug. 4, 2021)